

REMARKS

Claims 1-8, 10-16, 18 and 19 are pending in the present application. Claims 1, 4, 5, 6, 8, 10-13, 15 and 16 are amended, and new claims 18 and 19 have been added.

35 U.S.C. § 112, ¶ 1

Claims 1-8 and 10-16 are rejected under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement. More specifically, the Office action finds that the limitation “without isolating the polymer via a filtration step” added to claim 1 in the last amendment was not described in the specification. Claim 1 has been amended with the quoted limitation deleted. Applicants therefore respectfully request the Examiner to withdraw this rejection.

35 U.S.C. § 103

Claims 1-8 and 10-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable as obvious over Loffler et al. (U.S. Pat. App. Pub. No. 2001/0029287, now U.S. Pat. No. 6,437,068) (the “Loffler reference”) in view of CU Boulder Organic Chemistry Undergraduate Courses (<http://orgchem.colorado.edu/hndbksupport/solvremoval/solvremoval.html>) (the “Undergraduate Course reference”). Claim 1 has been amended to further clarify the steps and scope of the claimed method. Applicants respectfully traverse the rejection for reasons explained below.

Claim 1 defines a process for the preparation of certain polymer concentrates in liquid or liquid-disperse form, comprising, in relevant parts: A) free radically copolymerizing the recited components a), b) and c) to form a copolymer in a polymerization medium; B) subsequently adding a solvent or solvent mixture, one or more emulsifiers, or a mixture thereof to the mixture of copolymer and polymerization medium from Step A) without isolating the polymer from the polymerization medium; and C) removing the polymerization medium from the mixture of Step B). The solvent or solvent mixture is required to have a boiling point at least 10° C higher than that of the polymerization medium. It is clear from claim 1 that the polymerization medium is not removed from the resulting reaction mixture before the solvent or solvent mixture, the one or more emulsifiers, or the mixture thereof was added. Such a method is not taught or suggested by the teachings of the Loffler reference and the undergraduate course reference, either alone or in combination, and is not obvious over the prior art of record.

The Loffler reference discloses that the copolymers obtained therein can be used in oil-in-water or water-in-oil emulsions; emulsions comprise an oil substance consisting essentially of emulsifier(s) and an oil phase, and water. The Loffler reference also discloses that suitable oil substances are vegetable, animal, mineral and synthetic oils, which are higher-boiling solvents. However, according to the teaching of the Loffler reference, the copolymers obtained therein are isolated from the polymerization medium, for example, by filtration, before being used to make emulsions or other compositions. See col. 4, lines 23-25; col. 5, lines 15-19.

Nowhere does the Loffler reference teaches or suggests to prepare an emulsion or another composition by adding an oil substance directly into a reaction mixture containing the copolymer and the polymerization medium and then removing the polymerization medium.

The Undergraduate Course reference cited by the Examiner merely describes several common methods to remove solvent from a solution.

The combined teaching of the Loffler reference and the Undergraduate Course reference still does not teach or suggest a method that adds an oil substance to a reaction mixture containing the copolymer and a polymerization medium (e.g., a low boiling solvent), and then removing the polymerization medium. Both the conventional wisdom and the explicit teaching of the Loffler reference will direct one to separate the resulting copolymer from the polymerization medium first, and then combining the copolymer with the oil substance.

Applicants unexpectedly found that uniform liquid or liquid disperse concentrates of the copolymers of the present application, which are preferably incorporated into aqueous media, can be prepared in a one-pot process by adding a higher boiling solvent or solvent mixture and/or one or more emulsifiers directly to the reaction mixture of a copolymer and a polymerization medium, and then removing the polymerization medium.

It is not obvious to modify the method of the Loffler reference to the one as claimed by claim 1 of the present application. Therefore, claim 1 is patentable over the prior art of record.

Claims 2-8, 10-16, 18 and 19 depend from claim 1, and therefore, they are patentable over the prior art of record at least for the same reason as to claim 1.

CONCLUSION

In view of the above amendments and remarks, the applicant respectfully requests reconsideration and allowance of all pending claims (1-8, 10-16, 18 and 19). A Notice of Allowance is respectfully solicited.

The Commissioner is authorized to charge the required fees for the RCE, Petition for Extension of Time, and any additional fees, or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Respectfully submitted,
McAndrews, Held & Malloy, Ltd.

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